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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/902,425	07/10/2001	Michael A. Serio	AFU-20	7678

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EAST HARTFORD, CT 06108

EXAMINER

RIDLEY, BASIA ANNA

ART UNIT	PAPER NUMBER
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1764

DATE MAILED: 08/10/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

09/902,425

Applicant(s)

SERIO ET AL.

Examiner

Basia Ridley

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 24 March 2005 and 27 June 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-10 and 12-17 is/are pending in the application.
- 4a) Of the above claim(s) 1-9 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 10 and 12-17 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 10 July 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

## DETAILED ACTION

### *Claim Rejections - 35 USC § 103*

1. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

2. Claims 10 and 12-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chittick (USP 4,421,524) in view of Moriarty et al. (USP 5,993,751).

Regarding claims 10 and 12-13, Chittick discloses a power generation system, comprising;

- a gas-fueled power generator (C1/L32-47 & C5/L64-C6/L4);
- two-stage reaction apparatus for producing a fuel gas product from a hydrocarbonaceous material, operatively connected to supply fuel gas to said power generator (C2/L7-55 & C5/L1-C6/L4);
- said reaction apparatus being constructed for effecting a process comprising the following steps, carried out:
  - (a) introducing a non-gaseous hydrocarbonaceous material into a pyrolysis chamber, comprising a first stage of said apparatus, and pyrolyzing the hydrocarbonaceous material therein so as to produce a primary fuel gas mixture, a pyrolysis liquid, and a first carbonaceous residue (C3/L1-C6/L4);
  - (b) introducing the primary fuel gas mixture and the pyrolysis liquid into a second chamber, comprising a second stage of said apparatus and containing a catalyst, and heating said liquid therein, in a substantially non-oxidizing atmosphere, to a temperature of about 900° to 1100° C and substantially above the temperature at which pyrolysis is effected in step (a), so as to produce additional fuel gases and additional solid carbonaceous residue, without substantially altering the

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composition of the primary fuel gas mixture (C3/L1-C6/L4);

- (c) withdrawing the primary fuel gas mixture and the additional fuel gas from said second chamber (C3/L1-C6/L4); and
- (d) introducing air, oxygen, carbon dioxide or steam into each of said chambers to effect reaction with, and at least partial removal of, said carbonaceous residue therein (C4/L61-68).

While Chittick does not explicitly disclose means for controlling the flow of fuel gas from said reaction apparatus to said generator, said means are inherent in the system of Chittick.

Chittick does not explicitly disclose means for controlling the steps of the process by monitoring the formation of products.

Moriarty et al. teaches that varying process conditions will affect product composition (C3/L20-27, C3/L66-C4/L2, C6/L55-C7/L3), a system for controlling product composition will inherently include data processing means for controlling the steps of the process.

It would have been obvious to one having ordinary skill in the art at the time of the invention to use data processing means for controlling the steps of the process, as taught by Moriarty et al., in the system of Chittick, for the purpose of increasing system flexibility and improving operation efficiency by allowing production of products having desired composition.

Regarding limitations recited in claims 10 and 12-13 which are directed to a manner of operating disclosed system, neither the manner of operating a disclosed device nor material or article worked upon further limit an apparatus claim. Said limitations do not differentiate apparatus claims from prior art. See MPEP § 2114 and 2115. Further, process limitations do not have patentable weight in an apparatus claim. See *Ex parte Thibault*, 164 USPQ 666, 667 (Bd. App. 1969) that states "Expressions relating the apparatus to contents thereof and to an intended operation are of no significance in determining patentability of the apparatus claim."

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3. Claims 14-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chittick (USP 4,421,524) in view of Moriarty et al. (USP 5,993,751) and further in view of Admitted Prior Art.

While the combined references of Chittick in view of Moriarty et al. do not explicitly disclose said data processing means implementing an artificial neural network model based upon product concentrations, the applicant admits, in Admitted Prior Art (see pages 14 and 15 of instant disclosure) that artificial neural network models showed a high degree of success in correlating process conditions and desired product yields. In view of said disclosure, and since the application is silent to unexpected results, an ordinary artisan would have used data processing means implementing an artificial neural network model based upon product concentrations in the system of Chittick in view of Moriarty et al., and used said processing means correlate process conditions to the desired product yields, since doing so would amount to nothing more than a use of a known controller for its intended use in a known environment to accomplish entirely expected result.

Regarding limitations recited in claims 14-16 which are directed to a manner of operating disclosed system, neither the manner of operating a disclosed device nor material or article worked upon further limit an apparatus claim. Said limitations do not differentiate apparatus claims from prior art. See MPEP § 2114 and 2115. Further, process limitations do not have patentable weight in an apparatus claim. See *Ex parte Thibault*, 164 USPQ 666, 667 (Bd. App. 1969) that states "Expressions relating the apparatus to contents thereof and to an intended operation are of no significance in determining patentability of the apparatus claim."

4. Claim 17 is rejected under 35 U.S.C. 103(a) as being unpatentable over Chittick (USP 4,421,524) in view of Moriarty et al. (USP 5,993,751) and further in view of Aldridge (USP 3,816,298) or Bayer (USP 5,114,541).

Regarding claim 17, Chittick in view of Moriarty et al. discloses all of the claims limitations

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as set forth above. Additionally the reference discloses the system wherein said second chamber contains a catalyst (C4/L61-68 & C3/L61-68), but the reference does not explicitly disclose said catalyst being a silica gel-based catalyst. Both, Aldridge (C3/L46-C4/L50) or Bayer (C2/L7-20) establish equivalency of catalysts used by Chittick with silica gel-based catalyst. As instant specification is silent to unexpected results, it would have been obvious to one of ordinary skill in the art at the time of the invention to substitute the catalyst of Chittick with silica gel-based catalyst, since such modification would have involved a mere substitution of known equivalents. A substitution of known equivalents is generally recognized as being within the level of ordinary skill in the art.

Regarding limitations recited in claim 17 which are directed to a manner of operating disclosed system, neither the manner of operating a disclosed device nor material or article worked upon further limit an apparatus claim. Said limitations do not differentiate apparatus claims from prior art. See MPEP § 2114 and 2115. Further, process limitations do not have patentable weight in an apparatus claim. See *Ex parte Thibault*, 164 USPQ 666, 667 (Bd. App. 1969) that states "Expressions relating the apparatus to contents thereof and to an intended operation are of no significance in determining patentability of the apparatus claim."

5. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(f) or (g) prior art under 35 U.S.C. 103(a).

***Response to Arguments***

6. Applicant's arguments filed on 24 March 2005 have been fully considered but they are not persuasive.

7. The applicant argues that the catalyst disclosed in Chittick is not a true catalyst, but can be merely considered to have a catalytic effect. This is not found persuasive. During examination proceedings, claims are given their broadest reasonable interpretation consistent with the specification. See *In re Graves*, 69 F.3d 1147, 1152, 36 USPQ2d 1697, 1701 (Fed. Cir. 1995). "Moreover, when interpreting a claim, words of the claim are generally given their ordinary and accustomed meaning, unless it appears from the specification or file history that they were used differently by the inventor. [Citation omitted]." *In re Paulsen*, 30 F.3d 1475, 1479, 31 USPQ2d 1671, 1674 (Fed. Cir. 1994). As rejected claims 10 and 12-16 are not limited to any specific catalyst, the substances disclosed in Chittick having catalytic effect read on the instant invention.

8. The applicant's arguments that Chittick does not disclose the inlets and outlets which are structural features of the instant invention are not persuasive, because Chittick clearly discloses all required inlets and outlets, as set forth above. Further, the examiner notes that neither the manner of operating a disclosed device nor material worked upon further limit an apparatus claim. Said limitations do not differentiate apparatus claims from prior art. See MPEP § 2114 and 2115. Further, process limitations, such as specific feedstock or product compositions, do not have patentable weight in an apparatus claim. See *Ex parte Thibault*, 164 USPQ 666, 667 (Bd. App. 1969) that states "Expressions relating the apparatus to contents thereof and to an intended operation are of no significance in determining patentability of the apparatus claim."

9. The applicant's arguments that apparatus of Chittick do not operate cyclically are not persuasive. Again, the examiner notes that neither the manner of operating a disclosed device nor

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material worked upon further limit an apparatus claim. Said limitations do not differentiate apparatus claims from prior art. See MPEP § 2114 and 2115. Further, process limitations do not have patentable weight in an apparatus claim. See *Ex parte Thibault*, 164 USPQ 666, 667 (Bd. App. 1969) that states “Expressions relating the apparatus to contents thereof and to an intended operation are of no significance in determining patentability of the apparatus claim.”

10. In response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., stationary solid material in first and second stages or feedback control used to change process conditions in real time) are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

The applicant argues that Moriarty et al. can not be used to modify the apparatus of Chittick because the process steps of Chittick and Moriarty et al. are very different. This is not found persuasive, as Moriarty et al. was merely relied upon to show that varying process conditions will affect product composition and that a system for controlling product composition will inherently include data processing means for controlling the steps of the process, as set forth above. It is examiner's position that said teaching can be applied to any process regardless of specific process steps. Specifically, it is not clear to the examiner, why one having ordinary skill in the art at the time of the invention would not expect that varying process conditions will affect product composition, especially in view of applicant's statement that “such general information is fundamental knowledge possessed by the person skilled in art” (see page 14, last paragraph of Response filed on 24 March 2005).

11. The applicant argues that catalyst disclosed by Aldridge comprises other substances and that



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silica gel is only a support and active catalytic component. In response the examiner would like to point out that the rejected claims do not exclude catalysts comprising other substances in addition to silica gel, as the claimed transitional term "comprising" permits the inclusion of other steps, elements, or materials, including both, those disclosed but not claimed by applicant and those neither disclosed nor contemplated by applicant. See *In re Baxter*, 656 F.2d 679, 686, 210 USPQ 795, 802 (CCPA 1981).

12. Applicant's arguments that both, Aldridge and Bayer teach catalyst which is used in a primary pyrolysis stage which operates at lower temperature than claimed secondary stage are not persuasive, because said references were not relied upon to teach catalyst in a secondary stage. The examiner has relied upon disclosure of Chittick to teach that it was known in the art at the time of the invention to use catalyst is used in the secondary stage.

### ***Conclusion***

13. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

14. Any inquiry concerning this communication or earlier communications from the examiner

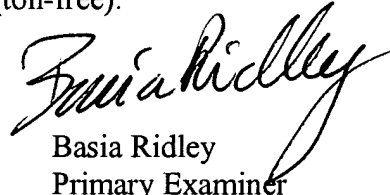
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should be directed to examiner Basia Ridley, whose telephone number is (571) 272-1453.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Glenn Caldarola, can be reached on (571) 272-1444.

The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Technical Center 1700 General Information Telephone No. is (571) 272-1700. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Questions on access to the Private PAIR system should be directed to the Electronic Business Center (EBC) at (866) 217-9197 (toll-free).

A handwritten signature in black ink, appearing to read 'Basia Ridley', with a stylized, flowing script.

Basia Ridley  
Primary Examiner  
Art Unit 1764

BR

August 7, 2005